

Habitat.—Castro, Parana.

Type.—Cat. No. 25571, U. S. N. M.

Allied to *C. nigristigmellus* Hampson.

***Chilopsis dorsipunctellus*, new species.**

Male.—Head and body light buff; at base of abdomen dorsally a large fuscous brown spot with brownish shading on two following segments. Fore wings light buff and with some dark gray irrorations; no point at end of cell; terminal black points on interspaces; a slightly darker postmedial line outangled below costa then oblique and wavy to before middle of inner margin; a faint subterminal dentate line; cilia whitish buff. Hind wings glossy light buff; a terminal dark line between veins 5 and 6. Wings below light buff; the discal space on hind wing more thinly scaled, whiter and faintly opalescent; traces of a postmedial darker line.

Expanse 40 mm.

Habitat.—Yahuarmayo, Peru.

Type.—Cat. No. 25569, U. S. N. M.

✓ ***Doratoperas biumbrata*, new species.**

Female.—Head and body above ochraceous buff, underneath light buff; legs ochraceous buff. Fore wings light buff; a few scattered light brown scales; a diffused light pinkish cinnamon shade from apex to inner margin at two-thirds from base; a similar shade from its inner edge at vein 5 to middle of inner margin, the space between suffused with ochraceous buff; minute terminal cinnamon points on interspaces; cilia ochraceous buff. Hind wings whitish, the inner margin with light buff hairs. The underside of hind wing shows a faint subterminal shade from costa to vein 5.

Expanse 65 mm.

Habitat.—Volcan de Santa Maria, Guatemala.

Type.—Cat. No. 25572, U. S. N. M.

Near *D. spectabilis* Felder which I do not consider the same as *D. atroparsellus* Walker; these two species were united by Hampson.

A NEW GENUS OF TWO-WINGED FLY WITH MANDIBLE-LIKE LABELLA

By J. M. ALDRICH.

In the Dipterous family Dolichopodidae the adult insects are well known to be predaceous; they capture the smaller and weaker flies, and in their favorite haunts at the edge of water they pick up small Chironomid and other dipterous larvae, as well as oligochaete worms. These various animals they hold within or partly within the labella while extracting the juices.

In the present paper a new form is reported, in which the labella have undergone a striking specialization, the outer lobe forming an organ like the mandible of a carnivorous beetle.

That this actually functions as a mandible can not be doubted, but no exact information is at hand regarding the nature of its food; it is known however to live on the sea beach.

In describing this unique fly as a new genus and species, I am indebted to Mr. Snodgrass for his assistance in the morphological aspect, as well as for his drawings. His article with plate follows mine.

Melanderia, new genus.

First antennal joint bare above, third antennal joint short, arista dorsal. Palpi large and flat, resting upon the proboscis; proboscis greatly enlarged, its basal portion forming a very broad, short tube, the apical half fleshy, opening underneath in a longitudinal slit, each side bilobed, the outer side pieces extending forward in the form of mandibles; in the type species they are elongated and sharp. In the normal resting position of the mouth they are drawn up enough to be mostly concealed behind the inner lobes, which extend below the palpi for some distance. Head bulging behind, with numerous bristles below at the neck, a single row of which extend across the occiput above with only a slight interruption in the middle. Prothorax with spines around the neck except below. Pleura hairy or bristly in front of the posterior spiracle, acrostichal hairs in an irregular double row. Scutellum with a single pair of upright bristles; dorsocentral bristles 6 or 7; intraalar 2, one of which is directly on the suture; supraalar 1, postalar 1. Abdomen with 6 visible segments in the male, 5 in the female.

Hind cross-vein of the wing beyond the middle, about its own length from the margin. Genital segments of the male rather prominent, but not extending forward under the venter.

Type of genus, *Melanderia mandibulata* new species.

The genus is related to *Hydrophorus*, differing principally in the structure of the mouth. Beside the typical species it includes *Hydrophorus curvipes* Van Duzee.

Melanderia mandibulata, new species.

[Plate 14, figs. 1-6.]

Male.—Front dark purple, face of the same color; the face runs to a sharp median point below. Palpi black, with numerous long hairs; proboscis black with brownish gray dust except on the mandible-like organs, which are shining, black, curved and sharp, and when let down so as to be visible, have an astonishing resemblance to the mandibles of a carnivorous beetle. The basal segment of the mouth is almost as wide as the whole head and has two or three rows of hairs across its apex below. Back of head with black hairs partially arranged in rows, the lower hairs much the longer; antennae wholly black, very short, the arista thickened at base for a very short distance, slender for the rest of its length.

Mesonotum and scutellum green, sub-opaque, with brownish dust. The pleura rather pure green, but not very shining; in the side view the same color extends above the suture between the humerus and the wing; propleura of the same color with a tuft of coarse hairs; sternopleura on its posterior

portion above the coxa with a similar tuft of hairs; pteropleura with a cluster of smaller hairs on its lower part, directly below the calypters; the latter brown with blackish cilia. Abdomen of the same color as the thorax, somewhat flattened rather than compressed. Hypopygium black, the lamellae brown with black hair, rather spatulate in form, longer than one segment of the abdomen.

Front coxae green with rather thick whitish dust, on their front side with numerous erect rather long hairs; front femora of the same color, on the inner side near the base with a slight protuberance bearing a close bunch of 6 or 8 bristles; on the under side of the femur, near the base, are scattered, erect hairs, which become bristle-like about the middle where they form a cluster not very dense; front tibia dark brown, on its flexor side slightly curved and bearing an irregular row of erect, small black spines, which begin at the second third of its length; the apex of the tibia does not have any conspicuous spines.

Front tarsi black from the base, the last four joints almost equally long; the first joint as long as the following three, slightly swollen on the under side, and bearing a few spines below. Middle and hind femora slender, subshining, green, the middle one with a row of erect bristles on the upper front side, beginning about the middle, and some rather long hairs below, not arranged in rows. Middle and hind tibiae and tarsi black.

Wing elongated, narrow, uniformly brown in color, the third and fourth veins parallel and rather far apart, ending in the apex; hind cross-vein at right angles to costa.

Female.—Head structure precisely as in the male except that the face is a little wider. Front legs of plain structure. Wing as in the male.

Length of male 4.6 mm.; of female 5.2 to 6.2 mm.

Described from 29 specimens of both sexes, collected by A. L. Melander on the beach of the Pacific Ocean at Ilwaco, Washington, in July, 1917.

Type.—Male No. 25240 U. S. Nat. Mus.

In 24 specimens out of 29 the proboscis is retracted so that the mandible-like organs are concealed by the inner lobes of the lobella: in the remaining five these organs are plainly visible as in the accompanying figure.

Melanderia curvipes Van Duzee.

Hydrophorus curvipes Van Duzee, Entomological News, Vol. 29, p. 49, 1918.

A paratype female is in the National Collection from San Diego, California, collected by Mr. Van Duzee; there are also one male and three females collected by the writer at Santa Barbara, California, July 6, 1917; one of the latter has the mouth let down sufficiently to show the anterior tips of the side pieces, but instead of being pointed, as in the other species, they are rounded; they are however shining black for a little distance and sharp enough so that they doubtless serve for grasping and holding animals of some size. This species has in front of the posterior spiracle a row of three or four well developed

bristles, the male does not have the striking tuft on the inner side of the front femur and there are slight differences in the other peculiarities of the front legs. It is considerably smaller than the preceding species, the male measuring hardly more than 3 mm. and the female about 3.5 mm. The front and face are green instead of purple and the third vein runs closer to the second than in *mandibulata*, curving considerably backward, near the tip of the wing.

Paratype, Female No. 25241, U. S. N. M.

MANDIBLE SUBSTITUTES IN THE DOLICHOPODIDAE.

BY R. E. SNODGRASS.

A first view of the face of *Melanderia mandibulata* (pl. 14, fig. 1) gives one a decided shock, followed by a desire to discover by what morphological trick the fly so cleverly imitates the features of a mandibulate insect. But the disguise is a flimsy one. Each labellum of the proboscis (fig. 6) is divided into an upper and a lower lobe (*a* and *b*, *c*), free terminally, but united basally by an ample infolded membrane. The lower lobe is differentiated again into a basal part (*c*) and a terminal part (*b*), the latter of thick, polished chitin and produced into a large, sharp, free tooth turned inward toward the one on the opposite side (fig. 1). These are the "mandibles." The lobe (*c*) is movably articulated at its base to the basal plate (fig. 6 *Th*) of the labium. This sclerite, called the theca, as in most flies, presents a high median ridge on its inner or anterior surface which gives attachment to muscles diverging to the lobes of the labellum. The fibers on each side are separated into two bundles, the proximal ones being inserted on the upper outer angle of the basal lobe (*c*) of the labellum, and the distal ones on the inner, median angle of the same lobe, which is united internally to the lower margin of *Th* by a special median articular condyle. Thus the lobe (*c*), terminating in the strongly chitinized point (*b*), can be worked in and out in true mandibular fashion. Figure 2 shows the parts of the labellum in repose with the mandible-like lobes (*b*) concealed beneath the upper lobes (*a*). The insect now presents the aspects of an ordinary fly.

But *Melanderia* possesses, besides its pseudo-mandibles, other mouth structures of interest which, however, are not visible externally. These are four great prongs depending from the epipharynx (fig. 3, *Ephy*), in addition to the usual hypopharynx (*hphy*), which is a strongly-developed, decurved appendage projecting from the lower lip of the mouth within the anterior enclosure of the labium. These parts may be exposed as shown in figure 3 by dissecting off the rest of the head